Chapter 5. Improving Transportation: Public Satisfaction & Transportation Priorities

To learn the public's preference for what it wants in terms of improved transportation in Michigan in the future, we ask respondents two sets of questions and apply them to the same list of transportation priorities. The first question reads:

Q4. I am going to read you a list of aspects of Michigan's state transportation. For each, please tell me how satisfied you are on a scale of 1 to 5, with a "1" being among the aspects of Michigan's transportation with which you are the most satisfied and a "5" being among the aspects of Michigan's transportation with which you are the least satisfied. Please try to use the full range of the scale when giving your answers.

This question was followed by 19 items in the list, given in a random order. A second question was then read, followed by the same list of items, and also given in a random order:

Q5. Michigan faces a series of transportation priorities with limited resources. I am going to read you a similar list of priorities for Michigan's state transportation. In thinking about Michigan's priorities for the future, I would like you to tell me, on a scale of "1" to "5," how important it is that Michigan spend more resources to improve each area. Please keep in mind that asking for any increase in resources in one area requires a decrease in resources in another area. A "1" means it is the top most important for Michigan to spend more resources to improve that area, and a "5" means it is relatively less important for Michigan to spend more resources to improve that area. Again, please try to use the full range of the 1 to 5 scale when giving your answers.

These two questions tap into similar things—the more satisfied one is with an aspect of Michigan's state transportation, the less likely one is to see it as a priority and vice-versa. However, the two questions do not perfectly correlate. Correlation ranges from $R^2 = -.14$ (*the availability of electronic message boards*) to $R^2 = -.46$ (*the condition of pavement*), with the correlations strongest on items with which the public is least satisfied and most want improved. Thus, while they are related, these two questions do measure different ways of setting priorities: (1) how happy the public is with transportation now; (2) what the public wants the state to do more of in the future.

The latter question aims to impose the sense of a zero-sum situation where an increase in resources to improve something must come at a cost of cuts elsewhere. However, these instructions do not fully mitigate how respondents answer the questions, as the budgetary restraints are simply too hypothetical, leading to an overall increase in spending in the aggregate of responses. This is especially the case since the question does not also suggest that increased spending would or could lead to an increase in taxes. If it had, we suspect it would have led to lower correlations between the two sets of questions.

In the sections that follow, we will report the results for both question series, and then report the interaction between the two series among all Michigan adults and those within each of the seven MDOT regions. Thus, we will discuss subgroup differences, except for region, which we will analyze in greater depth in a later section. For the purposes of reporting these results in this section, we have divided the 19 items into four rough categories: (1) road conditions and repair; (2) traffic; (3) alternative modes of transportation; and (4) information.

On the five-point *satisfaction scale*, these items receive mean scores among all respondents (the average score for the five point scale) that range from 2.41 to 3.15. The lower the mean score, the more satisfied, on average, Michigan adults are with that item, with the lowest possible score being a "1" (most satisfied) and the highest being a "5" (least satisfied). On the five-point *importance scale* (for spending resources to improve an area of transportation), the mean score range is anywhere from 2.21 to 2.92. On this scale, the lower the score, the more important it is to spend more resources, with the lowest possible score being a "1" (most important) and the highest being a "5" (relatively less important). Among all respondents, a difference of .05 to .07 in the mean score between items using the same scale is statistically significant (depending on the item).

5.1 Road Conditions and Repair

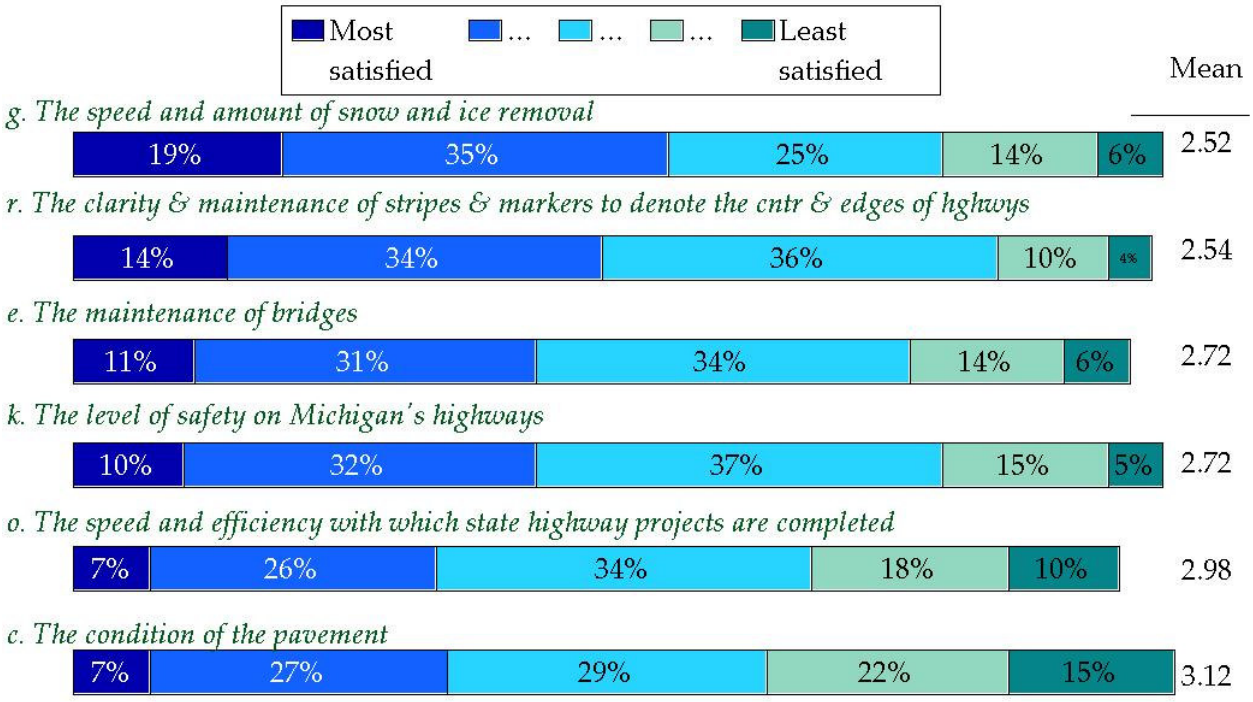
The category of road conditions and repairs is the largest, with 6 items. Among all of the 19 items tested in this survey, these six items range in their ranking as the second highest to the third lowest in satisfaction. They also range in their ranking as the top two most important priorities for the future to 14th most important priority.

The item with the highest level of satisfaction is *The speed and amount of snow and ice removal*, with a mean score on the five-point scale of 2.52 (**Figure 24**). This item is followed closely, in terms of satisfaction ratings, by *The clarity and maintenance of stripes and markers to denote the center and the edges of highways* (mean = 2.54).

These two items also have the lowest priority when it comes to spending more resources to improve them in the area. *Clearer and better maintained stripes and markers to denote the center and the edges of highways* is the lowest priority in this category (mean = 2.71), while *More and faster snow and ice removal* (mean = 2.63) is a bit higher priority (**Figure 25**).

Those areas with the lowest population density (fewer than 100 people per square mile) are much less satisfied with their snow and ice removal, although they are also less likely to want to see snow and ice removal as a spending priority for the future relative to other items. However, middle density areas (150-750 people per square mile) and high density areas (more than 3000 people per square mile) are considerably more likely to see snow and ice removal as a spending priority for the future relative to other items. We see no important subgroup differences when it comes to stripes and markers.

Figure 24. Public Satisfaction: Road Conditions and Repair (Question 4)



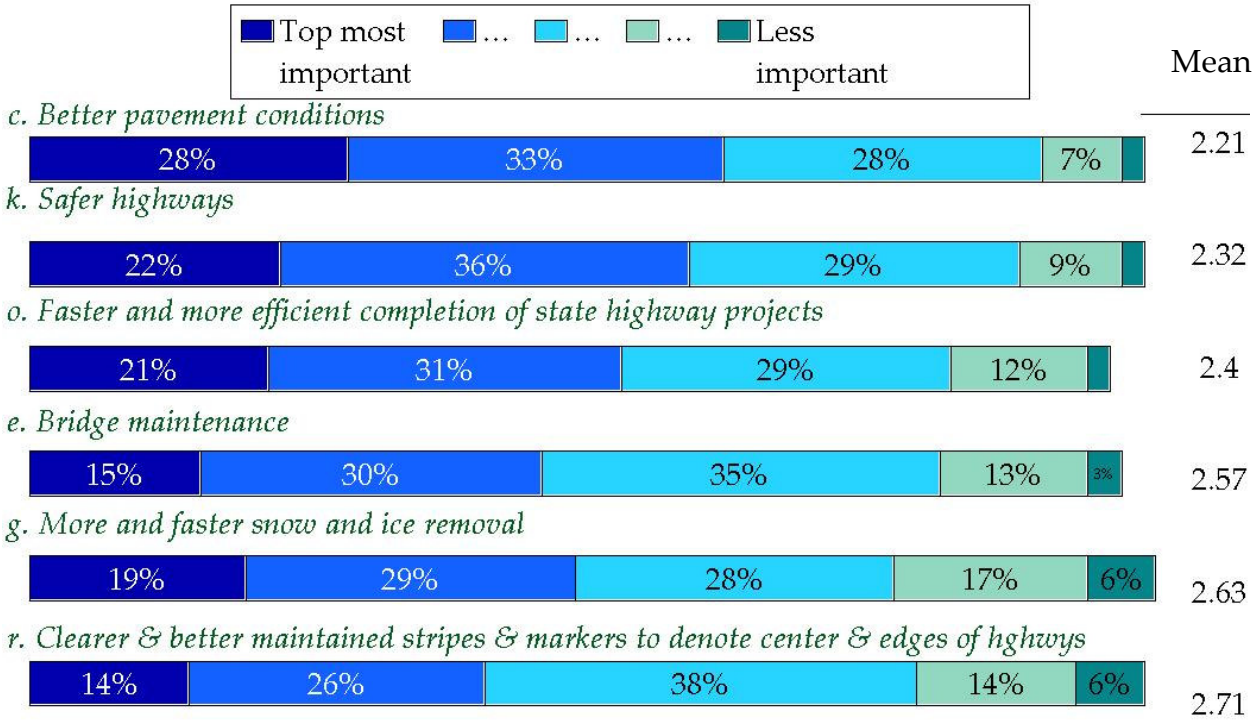
Remainder "Not sure."

In terms of satisfaction, the next two items in this category are *The maintenance of bridges* and *The level of safety on Michigan's highways*, both with considerably higher mean scores of 2.72. However, Safer highways is the second highest priority among all items in this category (mean = 2.32), while *Better maintenance of bridges* is considerably lower in importance (mean = 2.57).

Relative satisfaction with highway safely and bridge maintenance is highest in the least densely populated areas and lowest in the most densely populated areas. Highway safety is also a slightly lower priority relative to other items for residents with higher incomes and higher levels of education, and those with commutes over one hour. Bridge maintenance is also a relatively lower priority for those with commutes over one hour or with lower household incomes.

Finally, satisfaction is considerably lower for *The speed and efficiency with which state highway projects are completed* (mean = 2.98) and, especially, *The condition of the pavement* (mean = 3.12). While *Faster and more efficient completion of state highway projects* is a bit lower relatively as a priority for the future (mean = 2.40), *Better pavement conditions* (mean = 2.21) is the number one priority not only of those items in this category but of all 19 items.

Figure 25. More Resources for Future Priorities: Road Conditions and Repair (Question 5)



Remainder: "Not sure"

The condition of pavement receives especially low satisfaction ratings among older men, those with less education and lower incomes, those with the shortest commutes, and residents of Michigan's rural areas. Faster and more efficient completion of state highway projects is the number one priority for residents with household incomes over $75,000; it is especially important among women with higher incomes and among those who commute for more than one hour. However, it is a much lower priority among those in areas with the highest population density.

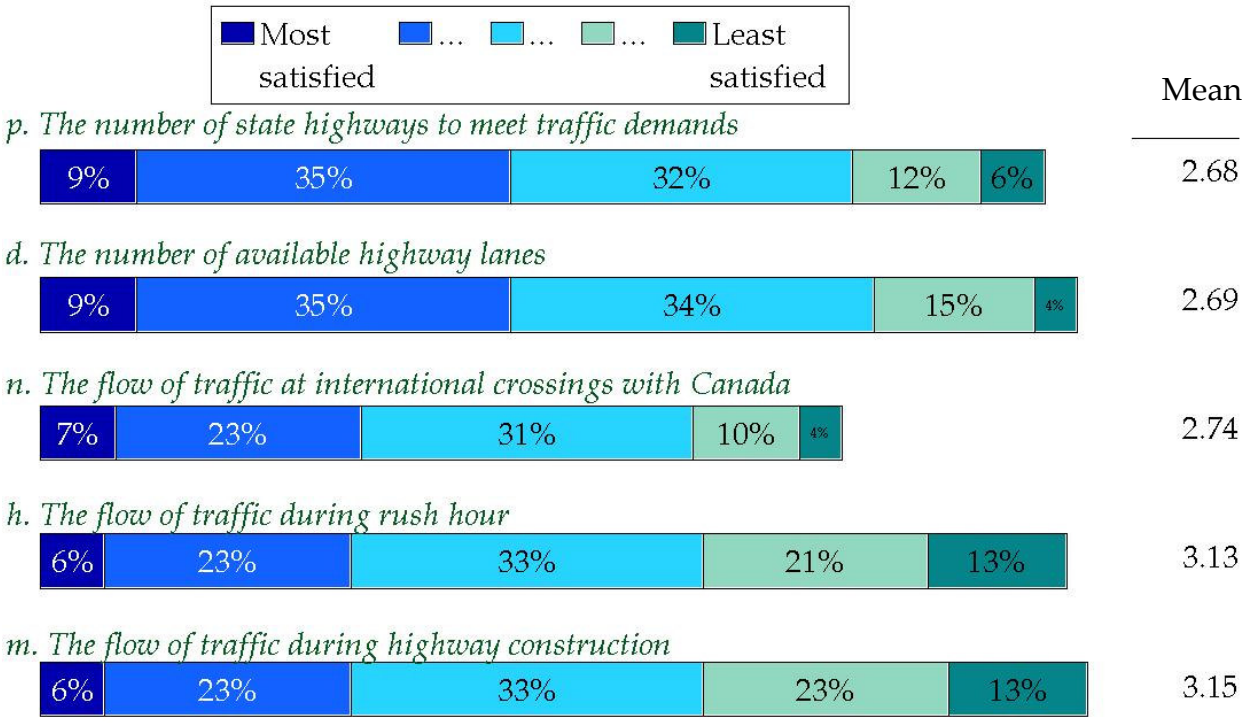
5.2 Traffic

Among all 19 items, satisfaction with the traffic items is fairly low—ranking anywhere from seventh to last in satisfaction. For overall importance, the traffic items are well distributed, ranking anywhere from third highest to third to last.

The two traffic items with the greatest levels of satisfaction have to do with the number of highways and highways lanes (**Figure 26**):

- *The number of state highways to meet traffic demands (mean = 2.68)*
- *The number of available highway lanes (mean = 2.69)*

Figure 26. Public Satisfaction: Traffic (Question 4)



Remainder: "Not sure"

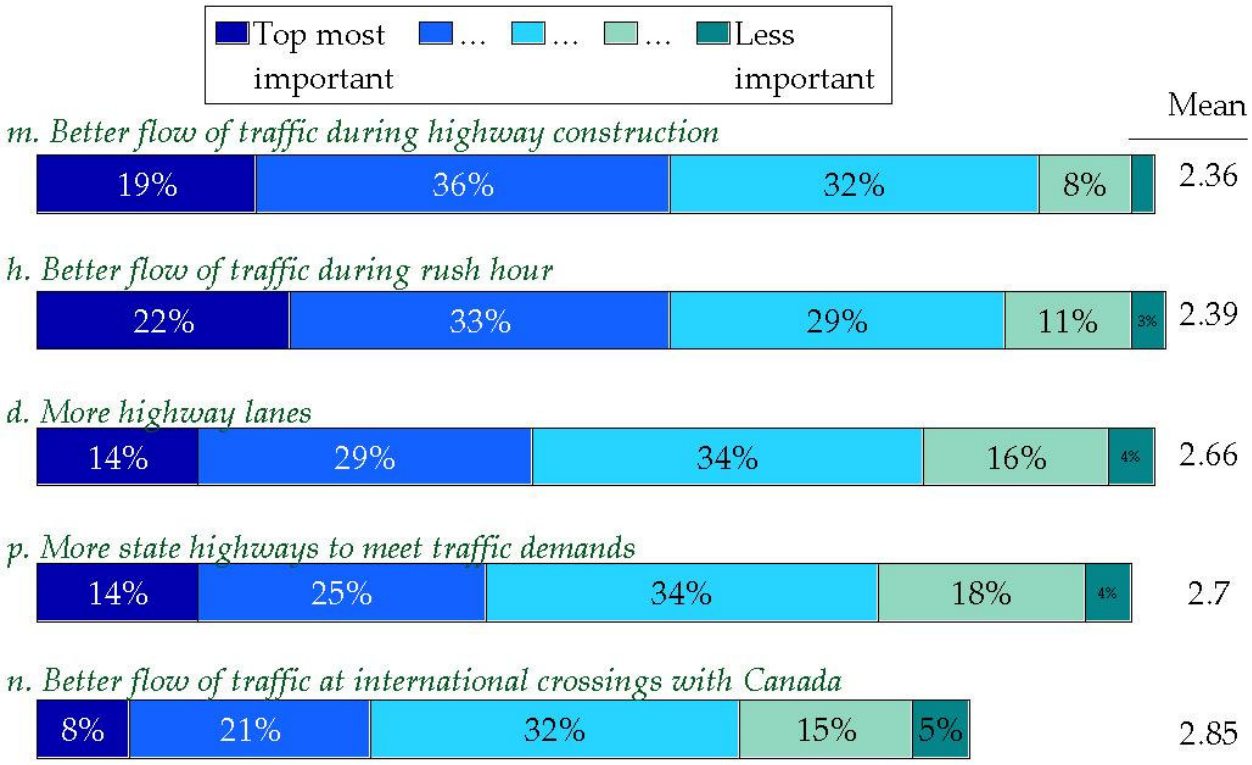
Although top in satisfaction, these items are not bottom in importance for the future. Indeed *More state highways to meet traffic demands* (mean = 2.70) and *More highway lanes rank in the middle* (mean = 2.66), when it comes to their importance as a priority in the future (**Figure 27**). As can be seen from these mean scores for both the importance and satisfaction measures, Michigan adults, in the aggregate, do not make a big distinction between these two items.

The traffic item that was lowest in priority for the future (mean = 2.85) while being in the middle in terms of satisfaction (mean = 2.74) has to do with *The flow of traffic at international crossings with Canada*. Many respondents did not know enough to say how important it was (18%) or how satisfied they were (25%) with this item.

Finally, two traffic items have a very low level of satisfaction among the public and a very high level of importance as a priority to improve in the future:

- *The flow of traffic during rush hour*
- *The flow of traffic during highway construction*

Figure 27. More Resources for Future Priorities: Traffic (Question 5)



Remainder: "Not sure"

The satisfaction mean scores for the flow of rush hour traffic and the flow of traffic during highway construction are nearly the same (3.13 and 3.15, respectively). The importance scores for these two items are also nearly the same (2.39 and 2.36, respectively). As was the case with the issue of more lanes or more highways, the Michigan public, in the aggregate, are unhappy with traffic and want the state to make it a greater priority in the future, but they do not make distinctions between construction traffic and rush hour traffic.

Satisfaction with the flow of rush hour traffic is higher among residents in less dense areas of the state and among older, lower income, and lower educated residents. Improving rush hour traffic is the top priority among college educated women, while it is considerably less important among lower income men.

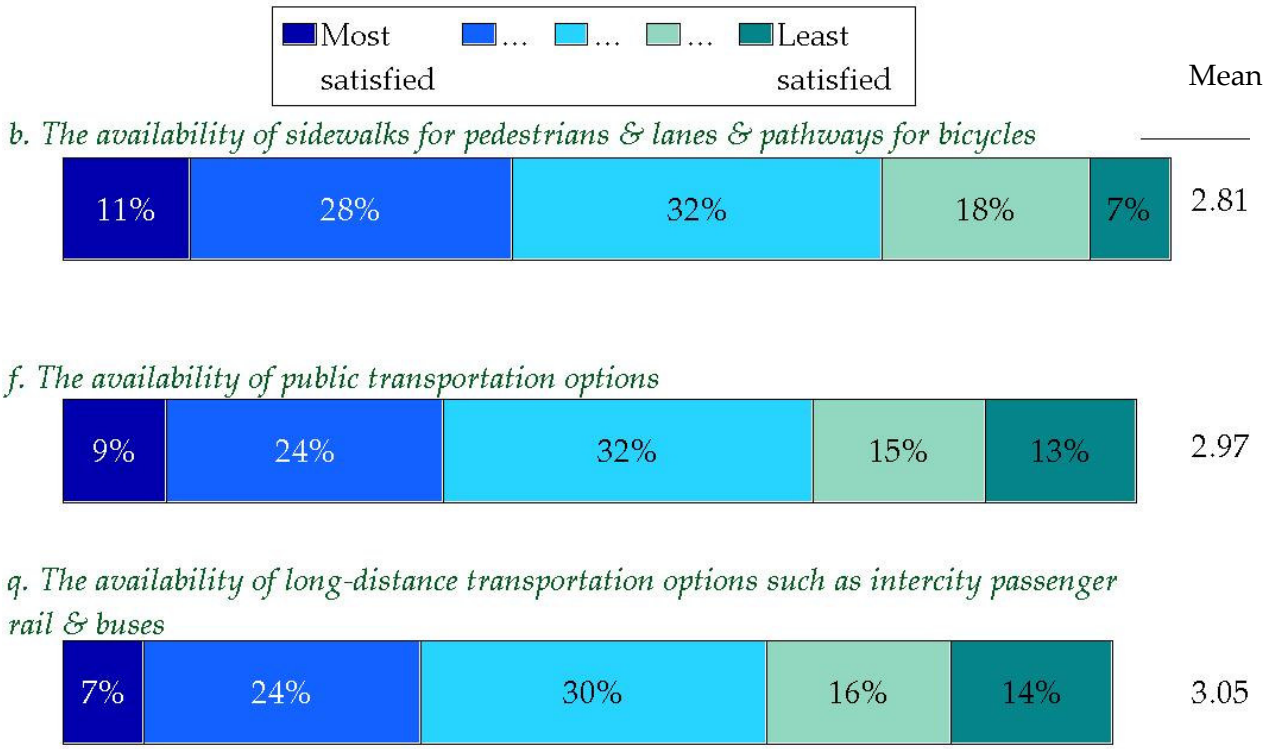
5.3 Alternative Modes of Transportation

There are three alternative modes of transportation items. Satisfaction with these items is fairly low—among all 19 items, they rank 12th, 14th, and 16th—while their importance as a priority to improve in the future is middling relative to all items—seventh, ninth, and 13th. This pattern is consistent with what we found in our earlier question that offered the choice between an

emphasis on developing alterative modes or on more building and maintaining highways. In the forced choice question, highways win out. As we see with the satisfaction and importance questions, while the public is somewhat unhappy with the alternative modes they have, they are a little less willing to make them top priorities relative to other possible transportation priorities for the state.

Satisfaction is the highest for *The availability of sidewalks for pedestrians and lanes and pathways for bicycles* (mean = 2.81—**Figure 28**), and it is the item in this category that is the least important as a priority for the future (mean = 2.71—**Figure 29**). This item is considerably more important to residents with household incomes under $30,000 and satisfaction is a bit lower among those under 40 years of age, while it is higher for those who live in high density areas.

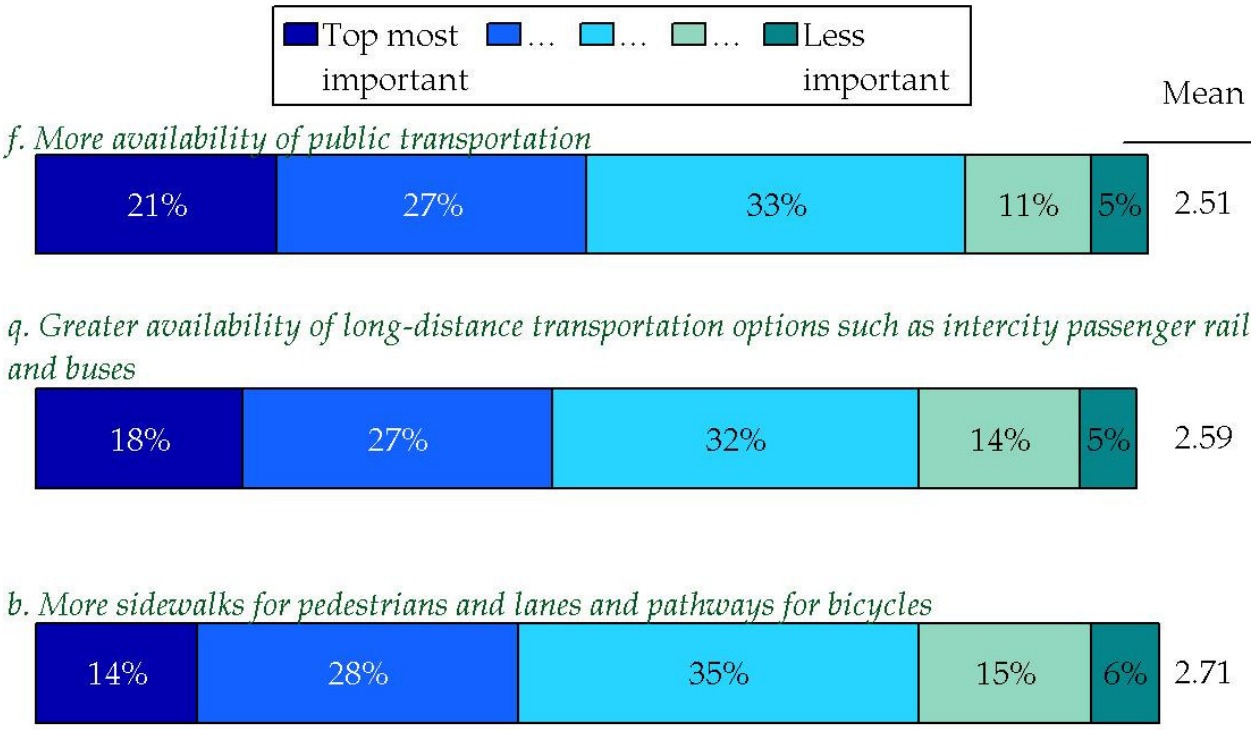
Figure 28. Public Satisfaction: Alternative Modes of Transportation (Question 4)



Remainder: "Not sure"

The other two items are more closely bunched together. *The availability of public transportation options* has a satisfaction mean score of 2.97 and an importance mean score of 2.51. *The availability of long-distance transportation options such as intercity passenger rail and buses* has a slightly lower satisfaction mean score (3.05) and a slightly lower mean score importance as a priority for the future (2.59). Public transportation is a much higher priority in areas with the

Figure 29. More Resources for Future Priorities: Alternative Modes of Transportation (Question 5)



Remainder: "Not sure"

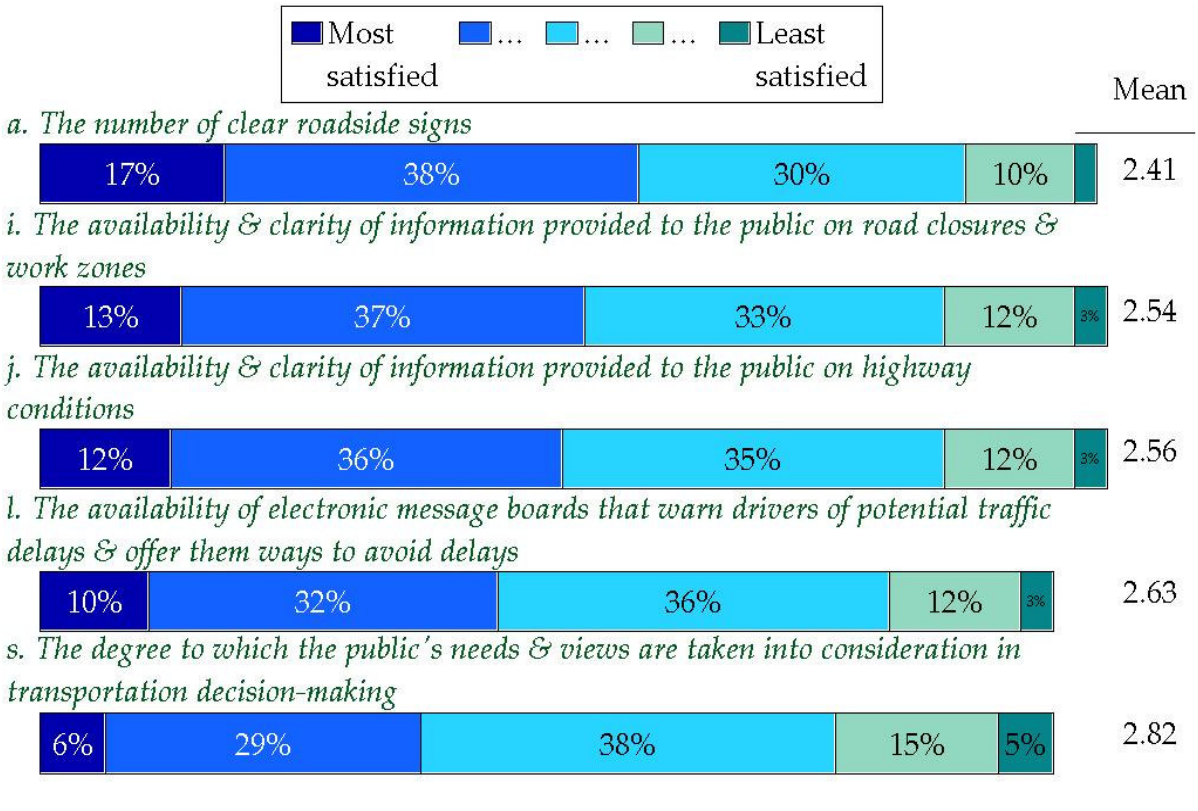
greatest population density and for those with low household incomes and low levels of education.

5.4 Information

As a category, transportation information is something with which the public is most satisfied and that it sees as less of a spending priority for the future. Among all 19 items, the five information items range in rank anywhere from the one with the highest level of satisfaction to 13th in satisfaction (in fact, four of the five items rank in the top six for satisfaction). When it comes to their importance as a priority for the future, one item ranks 6th and the 4 other items rank among the bottom five.

The one item that stands out as fairly low in satisfaction and fairly high in importance as a priority for the future is *The degree to which the public's needs and views are taken into consideration in transportation decision-making* (or, when worded as a priority, a greater effort to take them into consideration). This item has a mean satisfaction score of 2.82 and a mean importance score of 2.48 (**Figures 30 to 31**).

Figure 30. Public Satisfaction: Information (Question 4)



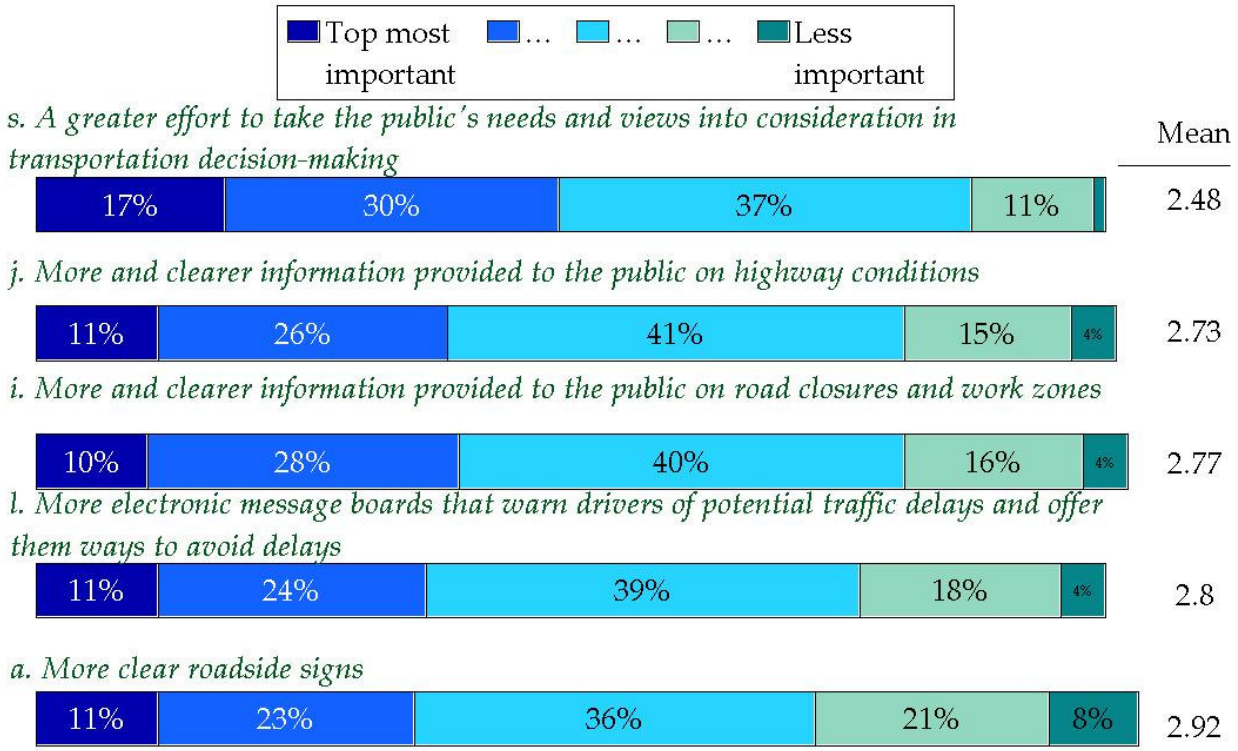
Remainder: "Not sure"

Another information item has the greatest level of satisfaction among all 19 items (mean=2.41) and is the least important as a priority among all 19 items (mean=2.92): *The number of clear road signs*. All demographic subgroups are very satisfied with how clear highways road signs are and do not see this as an important priority for the future.

The final three information items are relatively close together in terms of satisfaction (means ranging from 2.54 to 2.63) and as a priority (means = 2.73 to 2.80).

- *The availability and clarity of information provided to the public on highway conditions*
- *The availability and clarity of information provided to the public on road closures and work zones*
- *The availability of electronic message boards that warn drivers of potential traffic delays and offer them ways to avoid delays*

Figure 31. More Resources for Future Priorities: Information (Question 5)

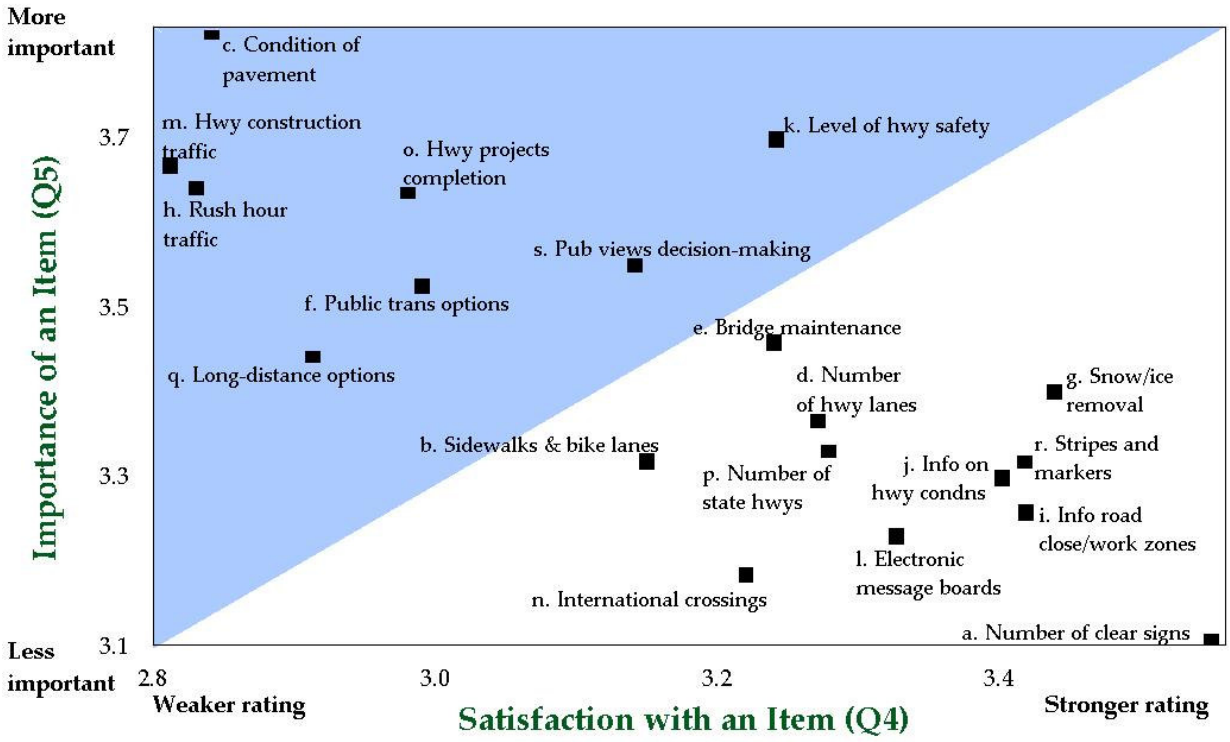


Remainder : "Not sure"

5.5 Combining Satisfaction Today with Priority for the Future

We can take the mean scores of all 19 items in both lists and plot them in a scatter graph (see **Figure 32**). In this graph, the y-axis, or vertical axis, is the importance of spending more to improve an aspect of Michigan's transportation system. The higher an item is plotted on the graph, the greater the importance given to it as a spending priority. The x-axis, or horizontal axis, of the graph is the level of satisfaction an item receives. The more to the right of the graph an item is, the higher the level of satisfaction with it. All told, those items closer to the top left corner are the ones that, based on public perception, should be Michigan's greatest priorities. Those items in the lower right hand corner are of lesser priority, based on public opinion. ***However, it is important to remember that public opinion is not always right***. Public perception and public experience is incredibly important for MDOT to understand as it plans transportation in and for the future. In some instances, the state should directly work to improve areas that the public wants to improve. In other instances, these results may suggest that Michigan needs to engage in a public information campaign to improve awareness of the importance of an aspect of transportation or to improve awareness of what has been

Figure 32. All Adults: The Importance of Transportation Items as a Future Priority by the Level of Satisfaction with the Items (Questions 4, 5)



accomplished in that area. Either way, a successful plan for transportation is one that considers and addresses public opinion.

In this graph, four items—furthest in the top left corner—stand out as the biggest priorities for MDOT:

- c. Better pavement conditions
- m. Better flow of traffic during highway construction
- h. Better flow of traffic during rush hour
- o. Faster and more efficient completion of state highway projects

A second tier of priorities, ranking below the ones above but still in need of addressing include:

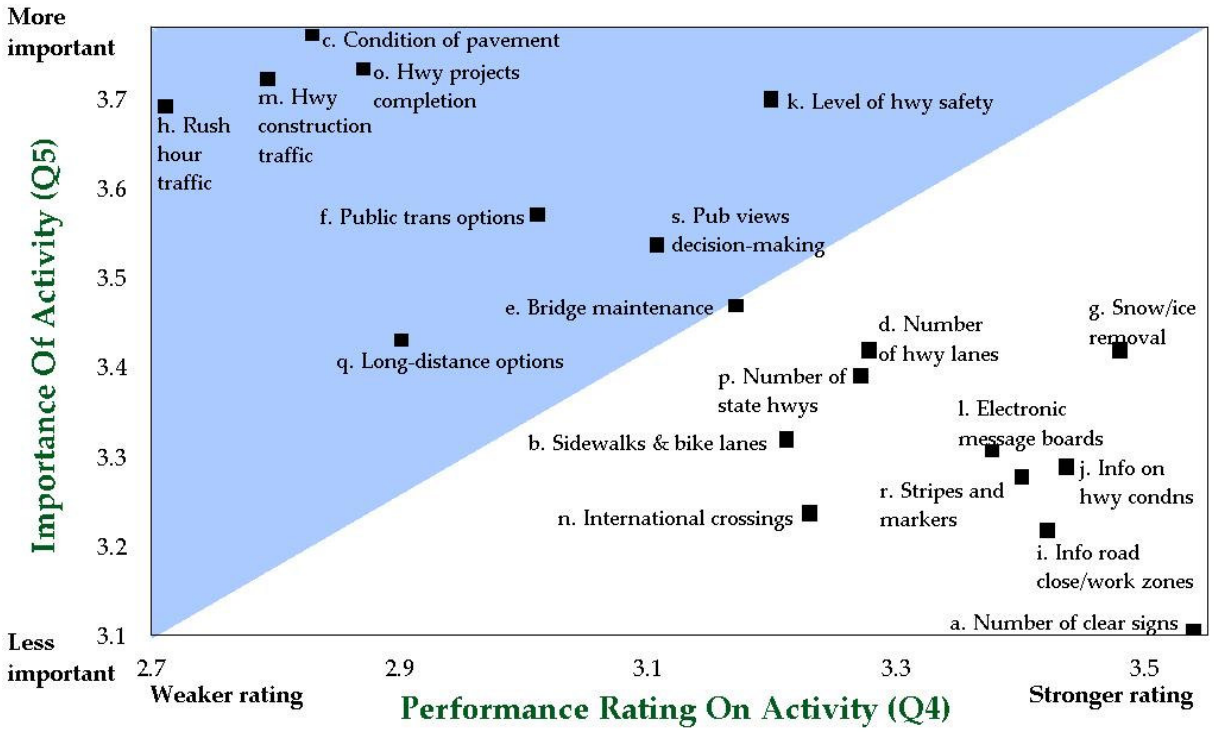
- k. Safer highways
- q. Greater availability of long-distance transportation options such as intercity passenger rail and buses
- f. More availability of public transportation options
- s. A greater effort to take the public's needs and views into consideration in transportation decision-making

Regionally, these eight items remain fairly stable. Although some of the items do shift around a bit, for the most part these core eight items are the top priority.

5.5.1 Metro Region

Since this region makes up 42% of the state's population, what is true for the state is likely to be true for this region. In **Figure 33**, the top four items noted above are even further bunched in the top left corner. Among the second grouping, more availability of public transportation stands out as the next highest priority. A ninth item—*better maintenance of bridges*—rises in importance enough to be considered part of the second tier of priorities. In this region the average satisfaction score for all 19 items finds this region among the least satisfied, and the average importance score suggests that this region is the most supportive of spending more in general to improve transportation in the future.

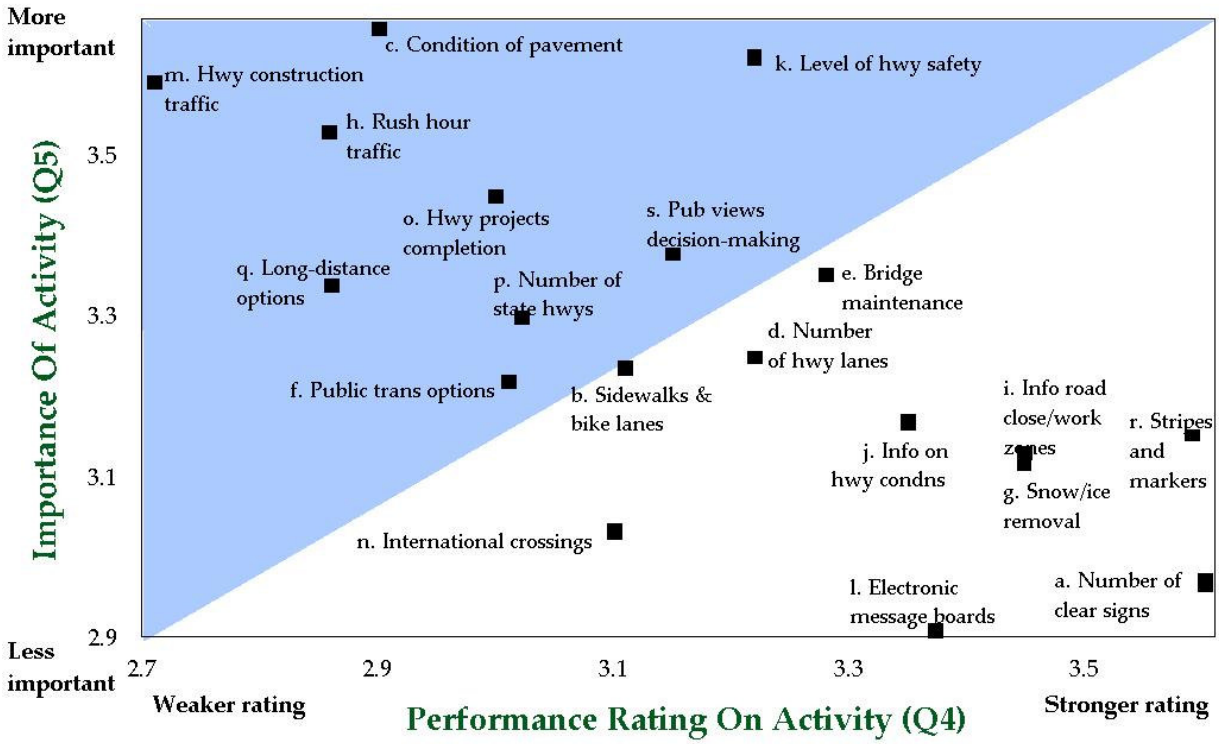
Figure 33. Metro: The Importance of Transportation Items as a Future Priority by the Level of Satisfaction with the Items (Questions 4, 5)



5.5.2 University Region

In this region, *Faster and more efficient completion of state highway projects* drops from the first tier of priorities to the second (**Figure 34**). *More state highways to meet traffic demands* (item p) rises into the second tier of high priorities. This is the only region where that item rises so high.

Figure 34. University: The Importance of Transportation Items as a Future Priority by the Level of Satisfaction with the Items (Questions 4, 5)

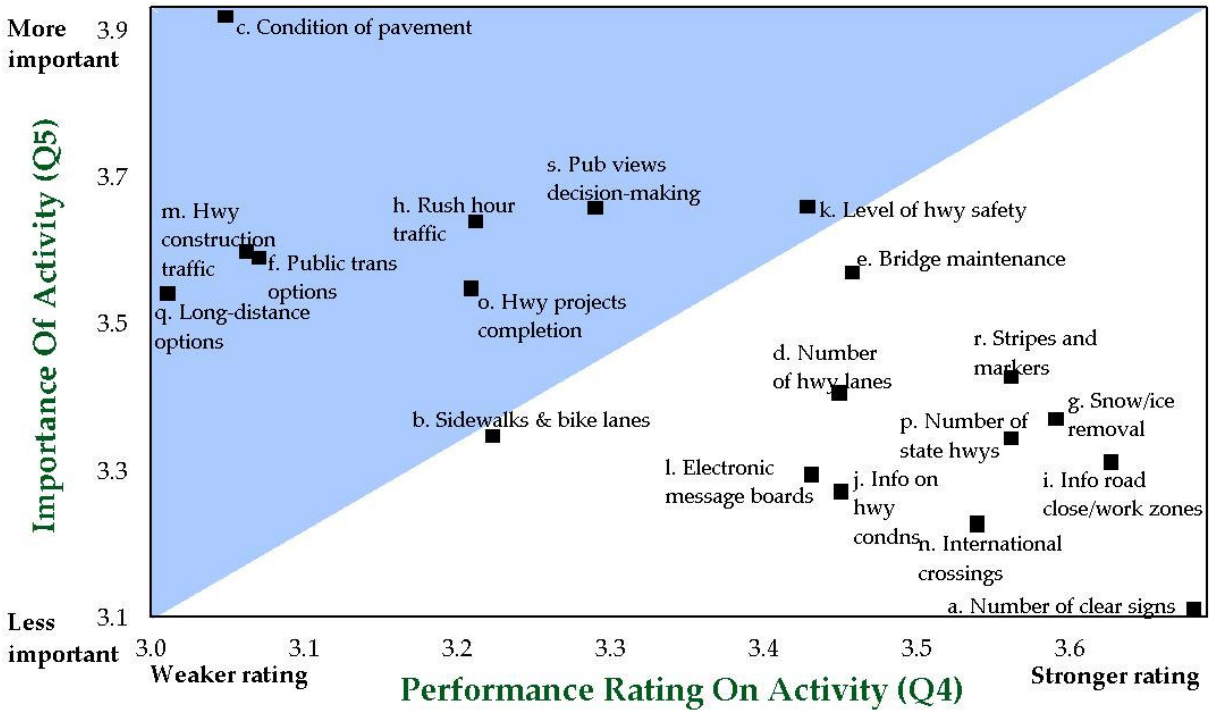


While the average satisfaction mean score finds this region to be relatively less satisfied with all aspects of transportation; however, the average importance score suggests that residents in the University Region are also the least willing to spend more to improve all of those aspects of transportation.

5.5.3 Southwest Region

In this region, *Better pavement conditions* separates itself from all other items to be the sole, most important priority (**Figure 35**). This is clearly the biggest issue in this region. Although still a second tier item, *Faster and more efficient completion of state highway projects* is a less important priority in this region. The average satisfaction mean score for all items in this region was one of the highest.

Figure 35. Southwest: The Importance of Transportation Items as a Future Priority by the Level of Satisfaction with the Items (Questions 4, 5)



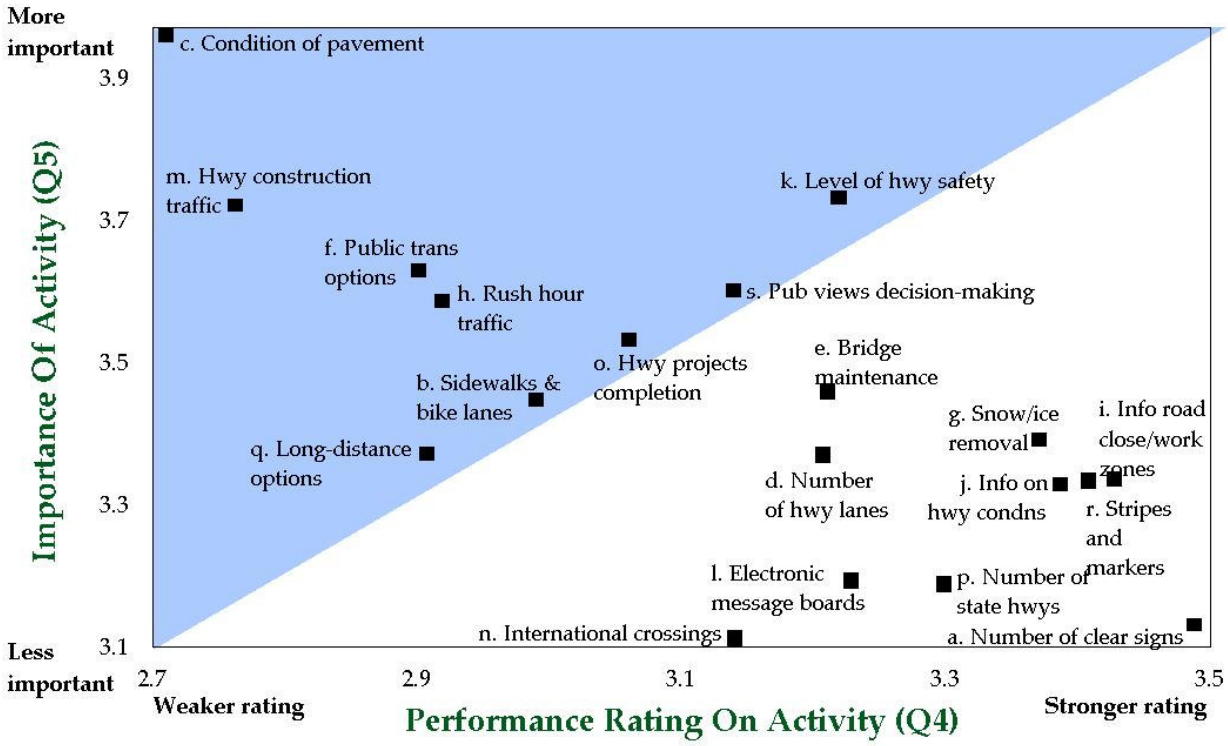
5.5.4 Bay Region

Better pavement conditions is also the biggest issue here. It is both a much greater priority than all other issues and the item with the lowest satisfaction rating (**Figure 36**). *Faster and more efficient completion of state highway projects* is also a less important priority in this region, while *More availability of public transportation options* is a greater priority. This is the only region where *More sidewalks for pedestrians and lanes and pathways for bicycles* reaches among the second tier of high priority items. The Bay Region is also among the very least satisfied and the most willing to spend more on transportation, when taking an average of the mean scores for all 19 transportation items.

5.5.5 Grand Region

Similar to what we saw in the MDOT satisfaction measures earlier in this report, this region is among the most satisfied when taking an average of the mean scores for all 19 items. *Better pavement conditions* is also the biggest issue here (**Figure 37**).

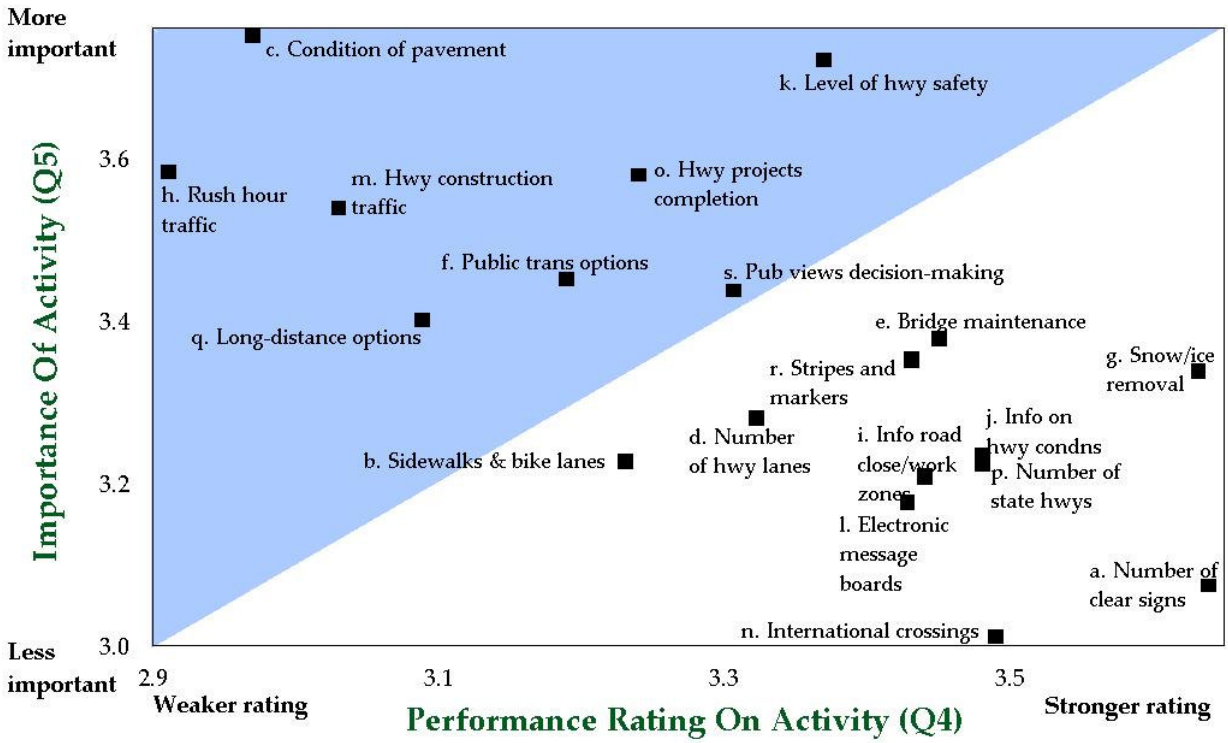
Figure 36. Bay: The Importance of Transportation Items as a Future Priority by the Level of Satisfaction with the Items (Questions 4, 5)



5.5.6 North Region

In this region, *Better pavement conditions* is also the biggest issue, but *More and faster snow and ice removal* jumps to become the second biggest priority (**Figure 38**). This is the only region where snow and ice removal is among the first or second of transportation priorities. *Safer highways* falls out of the top tier in this region—most likely because pavement conditions and snow removal rank so much higher than all of the other issues. This region is among the least willing to spend more for improved transportation, based on the average mean score for all 19 items.

Figure 37. Grand: The Importance of Transportation Items as a Future Priority by the Level of Satisfaction with the Items (Questions 4, 5)



5.5.7 Superior Region

Once again, *Better pavement conditions* is the clear top priority in this region (**Figure 39**). *Faster and more efficient completion of state highway projects* is not among the top two tiers of priorities in this region, most likely due to the lack of four lane highways in the region. As is true in the North Region, this region, even with its low population density, finds the flow of traffic during rush hour to be bad enough to make it a top priority.

Figure 38. North: The Importance of Transportation Items as a Future Priority by the Level of Satisfaction with the Items (Questions 4, 5)

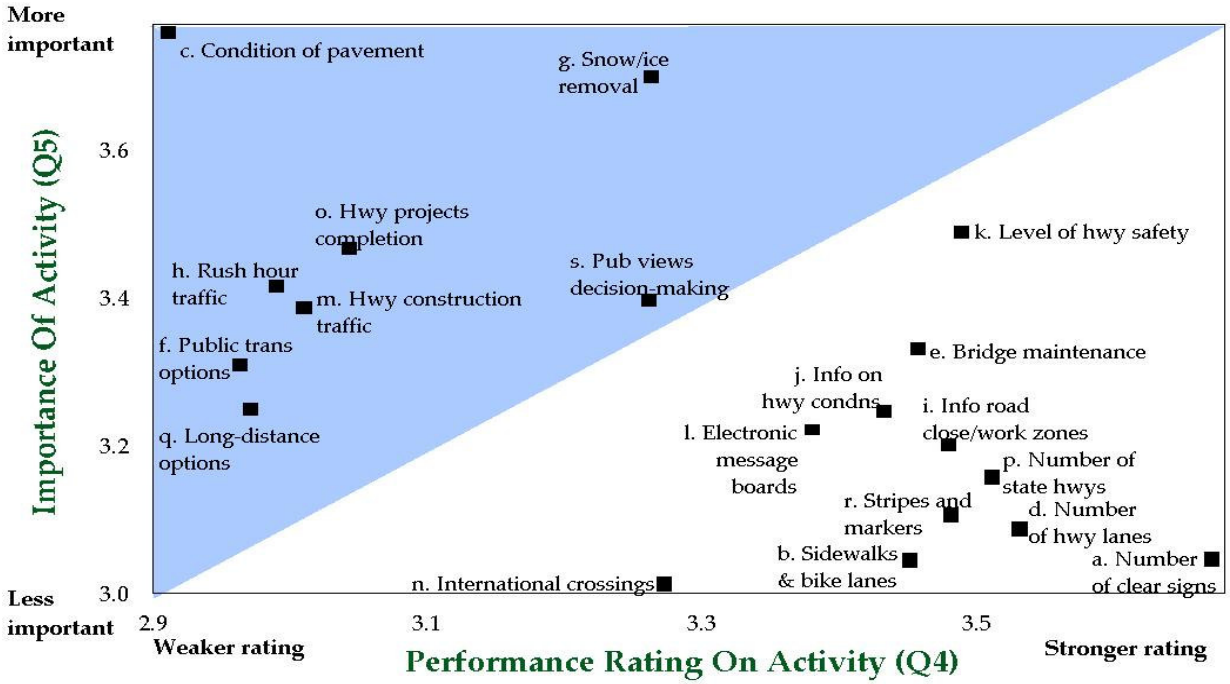


Figure 39. Superior: The Importance of Transportation Items as a Future Priority by the Level of Satisfaction with the Items (Questions 4, 5)